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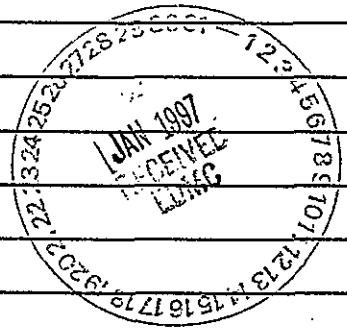

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Title of Document: 200W-ZP-1 PUMP-AND-TREAT SYSTEM INSTRUMENT CALIBRATION PROCEDURES

Author: T. J. Gibson

Approval: J. D. Isaacs, Groundwater Project Engineer

Signature 9-23-96 Date

G. C. Henckel III, Manager, Groundwater Project

Signature 9/23/96 Date

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BHI-PC KC 09/24/96

200W-ZP-1 PUMP-AND-TREAT SYSTEM INSTRUMENT CALIBRATION PROCEDURES

Author: T. J. Gibson — 9/23/96 Date

Concurrence by: — 9-23-96 Date

— 9-23-96 Date

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200W-ZP-1 Pump-and-Treat System Instrument Calibration Procedures

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T. J. Gibson

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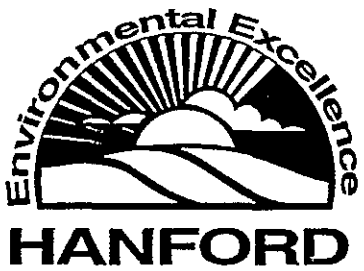

Prepared for the U.S. Department of Energy
Office of Environmental Restoration and
Waste Management

Bechtel Hanford, Inc.
Richland, Washington

CONTENTS

*This is a complete rewrite, therefore, no revision bars are in the margin.

APPENDICES

Data Sheet Index

1.0 PURPOSE

This procedure provides instructions for calibrating 200W-ZP-1 pump-and-treat system instrumentation.

2.0 INFORMATION

Information used to perform 200W-ZP-1 instrument calibrations includes this procedure and associated work control packages, vendor manuals, and other controlled documents such as 200W-ZP-1 electrical schematics 0200W-DD-J0071 through J0105.

3.0 PERSONNEL REQUIREMENTS

Personnel requirements for performing 200W-ZP-1 instrument calibrations are as follows:

- Instrument technician
- Equipment operator
- Field superintendent (as needed).

4.0 PROCEDURE COMPLIANCE

If any of the following occurs while performing this procedure, **immediately** stop work, place equipment in a safe condition, and notify your supervisor:

- Any equipment malfunction that could prevent fulfillment of the equipments' functional requirements.

- Personnel error or procedural inadequacy that could prevent fulfillment of procedural requirements.

Contact your supervisor for additional instructions if changes in system conditions affects work or work extends past end-of-shift.

*This is a complete rewrite; therefore, no revision bars are in the margin.

Always comply with Bechtel Hanford Inc. (BHI) and U.S. Department of Energy (DOE) environmental standards when disposing of any waste generated during performance of this procedure. Consult the Field Superintendent and the Area Hazardous Waste Coordinator for specific instructions. Additionally, always comply with BHI lock and tag requirements.

If any steps in this procedure's Data Sheets are not required or are deviated, those steps shall be appropriately annotated in the associated data sheet signoff space and explained in the COMMENTS section.

Sections or steps of this procedure may be performed out of sequence to suit maintenance or system conditions.

Appendix A lists 200W-ZP-1 instruments and their associated calibration frequency. Appendix B contains the associated Data Sheets used during performance of individual instrument calibrations.

5.0 PREREQUISITES

Obtain release from the Operations Superintendent prior to performing calibration procedures.

Check that applicable lock and tag requirements have been satisfied.

If any instrument is found defective, repair or replace AFTER approval from the person-in-charge (PIC) and repeat applicable steps for calibration.

This procedure typically provides instructions to calibrate discreet components with the 200W-ZP-1 system remaining **on-line**. To preclude system trips resulting from calibrating certain instruments, the PLC must accordingly be used to "force" certain system parameters to fixed, normal values. When points are forced, associated interlocks are disabled. **Therefore, an operator must be present to monitor the system and take protective action manually if required.**

6.0 TEMPERATURE LOOP - TYPE 'K' THERMOCOUPLE WITH OMEGA TEMPERATURE TRANSMITTER

This section provides instructions for calibrating OMEGA temperature transmitters.

6.1 Special Tools, Equipment, and Materials

- Thermocouple simulator (Type K, Model 1064 PSN compatible)
- TISOFT on-line and selected for display and use
- Operations Manual "TX64 Programmable Temperature Transmitter M1484/0492"
- Thermometer.

6.2 Instructions

1. At the PLC, force an input integer value equivalent to the actual system temperature of the instrument loop being calibrated.
2. Remove thermocouple leads from the OMEGA temperature transmitter and insert the thermocouple simulator leads.
3. Vary the simulator input per Data Sheet and record values read from the thermocouple simulator.
4. If the "AS FOUND" data is within tolerance, record data in the "AS LEFT" column of the Data Sheet and proceed with restoration. If data is not in tolerance, continue to step 5.
5. Using the specified vendor manual, apply the "Top Mode Configuration Setup" flowchart to perform 1) "Rezero/Respan" and/or 2) "Trim 4.00 mA/Trim 20.0 mA". Then, follow flow chart instructions to "Return to Operate Mode".
6. Vary the simulator input per the Data Sheet and verify proper calibration: record AS LEFT data in the Data Sheet.
7. If the transmitter cannot be calibrated, troubleshoot/repair/replace transmitter and verify calibration.

6.3 Testing and Acceptance

Verify (with a thermometer) that temperature reading is consistent with system conditions.

6.4 Restoration

1. Disconnect and remove test equipment.
2. Restore transmitter to normal conditions.
3. Unforce PLC input integer value(s).

6.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

7.0 THERMOCOUPLE LOOP WITH TYPE "J" THERMOCOUPLE FEEDING PLC THERMOCOUPLE CARD

This procedure provides instruction for calibrating Tank T01 and T02 temperature loops.

7.1 Special Tools, Equipment and Materials

- Thermocouple simulator (Type J, Model 1064PSN compatible)
- TISOFT on-line and selected for display and use
- Thermometer.

7.2 Instructions

1. At the PLC, force an input integer value equivalent to the actual system temperature of the instrument loop being calibrated.

2. Remove the thermowell cap and insert thermocouple simulator leads onto corresponding terminals.

3. Vary the simulator input per the corresponding Data Sheet and record values read from the associated MCP temperature indicator (Red Lion controls) on the "AS FOUND" column of Data Sheet.

4. If data is within tolerance, record "AS LEFT" data on Data Sheet and proceed with RESTORATION. If data is not within tolerance, troubleshoot/repair/replace transmitter and verify calibration.

7.3 Testing and Acceptance

Verify (with a thermometer) that temperature reading is consistent with system conditions.

7.4 Restoration

1. Disconnect and remove test equipment.
2. Restore thermowell to normal conditions.
2. Unforce PLC input integer value(s).

7.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

8.0 ROSEMOUNT DIFFERENTIAL PRESSURE TRANSMITTERS

This section provides instructions for calibrating Rosemount differential pressure transmitters (Model 1151 SMART).

8.1 Special Tools, Equipment, and Materials

- DVM
- Pressure Source (capable of generating 60 PSI)
- Pressure Gauge (0 to 60 PSI)
- 4 to 20 mA current source
- TISOFT on-line and selected for display and use
- Rosemount Measurement Operating Manual MFM4593A77
- HART Communicator Operating Manual MAN4275A00.

8.2 Instructions

1. Adhere to the applicable CAUTION and associated instructions PRIOR TO isolating the desired transmitter:

> **CAUTION**
> To preclude system trips, ensure the following prior to calibrating WATER LEVEL TRANSMITTERS.

- At the PLC, force and input integer value equivalent to the actual water level of the instrument loop being tested. This input will be entered at the first PLC analog input module in series with the corresponding level transmitter output signal.

- At the MCP, place the corresponding HONEYWELL controller in MANUAL.

> **CAUTION**
> To preclude system trips, ensure the following prior to calibrating PROCESS FILTER and FLOW (ΔP) TRANSMITTERS INSTRUMENT loops.

- At the PLC, force an input integer value equivalent to the current differential pressure of the loop being tested.

2. Valve out the (DESIRED) differential pressure transmitter to isolate it from the process and verify no pressure exists.

3. As required, disconnect tubing from **LOW** pressure port and vent to atmosphere.

4. Disconnect tubing from **HIGH** pressure port and connect test pressure source and gauge.

5. Remove cap from transmitter and connect HART Communicator to terminals.

6. Input test pressures per Data Sheet .

7. Record "AS FOUND" data on the Data Sheet.

8. If data is within tolerance, record "AS LEFT" data on the Data Sheet and , proceed with RESTORATION. If data is out of tolerance, continue to step 8.

   NOTE: Use the HART vendor manual in conjunction with the remaining instructions.

9. From the HART on-line menu, select DEVICE SETUP, then....

10. From the DEVICE SETUP MENU, select DIAG/SERVICE, then....

11. From the DIAG/SERVICE menu, select CALIBRATION, then....

12. From the CALIBRATION menu, select TRIM ANALOG OUTPUT, then....

13. From the TRIM ANALOG OUTPUT menu, select the desired option and follow the HART's "on-line" instructions.

14. If data is within tolerance, record "AS LEFT" data on the Data Sheet and proceed with RESTORATION. If the values are still unacceptable, repeat necessary instructions until values are within tolerance.

15. If the transmitter cannot be calibrated, troubleshoot/repair/replace transmitter and verify calibration.

8.3 Testing and Acceptance

Ensure all display readings are consistent with system conditions.

8.4 Restoration

1. Disconnect and remove test equipment.
2. Restore transmitter to normal conditions.
3. Reset alarms.
4. Return HONEYWELL controllers to AUTOMATIC.
5. Unforce PLC inputs.

8.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

9.0 ASCO AND UE PRESSURE SWITCHES

This section provides instructions for calibrating ASCO and UE pressure switches.

9.1 Special Tools, Equipment, and Materials

The following tools, equipment, and materials are required for calibrating the pressure switch loops:

- DVM (set on OHMs scale)
- Pressure Source (capable of generating 60 psig)
- Pressure Gauge (0 to 60 psig)
- TISOFT on-line and selected for display and use.

9.2 Instructions

1. At the PLC, force an input integer value equivalent to the actual system pressure of the instrument loop being calibrated.

2. Valve out the pressure switch to isolate it from the process and verify no pressure exists.

3. Either disconnect tubing from pressure switch or remove cap from pressure tap (tubing tee above switch) and connect test pressure source and gauge.

4. Remove pressure switch cover, lift pressure switch leads, and connect DVM across switch terminals.

5. Input test pressures per the Data Sheet. Record "AS FOUND" data on the Data Sheet.

6. If "AS FOUND" data is within tolerance, record "AS LEFT" data on the Data Sheet and proceed with RESTORATION; if data is not within tolerance, continue to step 7.

7. To adjust the pressure switch, turn the appropriate adjusting nut to set the actuation setpoint. The actuation setpoint will be observed on the DVM when the switch changes states.

8. Input pressure per the Data Sheet and calibrate switch. If data is within tolerance, record data in the "AS LEFT" column of Data Sheet and proceed with RESTORATION. If the instrument cannot be calibrated, continue to step 9.

9. Troubleshoot/repair/replace switch and verify calibration.

9.3 Testing and Acceptance

Ensure all display readings are consistent with system conditions.

9.4 Restoration

1. Disconnect and remove test equipment.
2. Reterm leads and replace switch cover.
3. Unforce PLC input integer value(s).

9.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

10.0 ASHCROFT PRESSURE GAUGES

This section provides instructions for calibrating field-installed ASHCROFT pressure gauges, Model 1279 or equal.

NOTE: Because of the variety of bourdon tube and linkage configurations, refer to specific vendor information when span adjustments are desired.

10.1 Special Tools, Equipment, and Materials

- Variable pressure source (e.g., manometer, dead weight tester) capable of generating 100 psig
- Pressure gauge (0 to 100 psig)

10.2 Instructions

1. Valve out gauge to isolate it from the process and verify that no pressure exists.
2. If necessary to properly calibrate gauge, remove gauge from installed location.
3. Connect input pressure source and test gauge.
4. Input test pressure(s) specified per the Data Sheet, and record "AS FOUND" data on the Data Sheet.
5. If "AS FOUND" data is within tolerance, record "AS LEFT" data on the Data Sheet and proceed with RESTORATION. If data is not within tolerance, continue to step 6.
6. If "zero" needs adjustment, either 1) use ZERO Adjusting screw, OR if none exists , 2) remove needle from spindle, and without moving spindle, reattach pointer to spindle so pointer indicates "zero."

7. Input test pressures per the Data Sheet. If data is within tolerance, record "AS LEFT" data on the Data Sheet. If data is not within tolerance, continue to step 8.

8. Troubleshoot/repair/replace gauge and verify calibration.

10.3 Testing and Acceptance

Ensure gauge readings are consistent with system conditions.

10.4 Restoration

1. Disconnect and remove test equipment.
2. Restore gauge to normal conditions.

10.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

11.0 DWYER MAGNAHELIC DIFFERENTIAL PRESSURE GAUGES

This procedure provides instructions for calibrating field-installed Dwyer Magnahelics, Model 2000 or equal.

11.1 Special Tools, Equipment, and Materials

- Variable pressure source (capable of generating at least 200 inches of water pressure)
- Pressure gauge (capable of indicating at least 100 inches of water pressure)
- Canvas strap wrench (or similar tool that will not damage instrument case).

11.2 Instructions

1. Valve out gauge to isolate it from the process and verify that no pressure exists.
2. If necessary to properly calibrate gauge, remove gauge from installed location.
3. Connect input pressure source and test gauge.
4. Input test pressures per the Data Sheet and record "AS FOUND" data in the Data Sheet.
5. If "AS FOUND" data is within tolerance, record "AS LEFT" data on the Data Sheet and proceed with RESTORATION. If data is not within tolerance, continue to step 6.
6. Using care not to damage case, grasp gauge case firmly and loosen bezel with canvas strap wrench (or similar tool).
7. Lift out plastic cover and "O" ring.
8. Remove scale screws and scale assembly using care not to damage pointer.

9. Change calibration by moving clamp (part number 70b illustrated by vendor literature).

   a. If gauge reads high, move clamp toward helix.
   b. If gauge reads low, move clamp away from helix.

10. Restore gauge and zero it.

11. After zeroing gauge, reapply pressure and compare reading with test instrument. Make additional adjustments as necessary.

12. If data is within tolerance, record "AS LEFT" data on Data Sheet.

13. If gauge cannot be brought into tolerance, troubleshoot/repair/replace gauge and verify calibration.

11.3 Testing and Acceptance

Ensure gauge readings are consistent with system conditions.

11.4 Restoration

1. Disconnect and remove test equipment.
2. Restore gauge to normal conditions.

11.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

12.0 SIERRA FLOW TRANSMITTERS

SIERRA flow transmitters are calibrated by the vendor.

12.1 Instructions/Restoration

1. Have operator shut down system.

2. Have support personnel remove flow transmitter needing calibration and install calibrated maintenance spare.

3. Have operator restore system to operation.

4. Prepare flow transmitter for shipment and return it to the vendor for factory calibration.

12.2 Testing and Acceptance

Installation of factory-calibrated spare will constitute recalibration of this Instrument loop.

12.3 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

13.0 B&K GAS ANALYZER

The B&K GAS ANALYZER is calibrated by the vendor.

13.1 Instructions

1. Have operator shut down system.
2. Have operator isolate B&K from process inputs.
3. Remove B&K, prepare B&K for shipment, and return to vendor.
4. Upon receipt, install vendor-calibrated B&K.
5. Have operator connect B&K to process inputs
6. Have operator restore system to operation.

13.2 Testing and Acceptance

Installation of factory-calibrated spare will constitute recalibration of this instrument loop.

13.3 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

14.0 RED LION DIGITAL INDICATORS

This procedure provides instructions for performing a calibration check and/or rescaling of MCP-mounted RED LION digital indicators.

14.1 Special Tools, Equipment, and Materials

- 4 mA - 20 mA signal generator (standard)
- Model IMP Instruction Manual.

14.2 Instructions

1. At the applicable MCP-mounted digital indicator, remove the (+) and (-) INPUT leads and install a 4 mA - 20 mA signal generator.

2. Vary the signal generator input per the Data Sheet and record "AS FOUND" data (read from the digital indicator being "cal-checked") on the Data Sheet.

3. If "AS FOUND" data is within tolerance, record "AS LEFT" data on the Data Sheet and proceed with RESTORATION. If data is not within tolerance, continue to step 4.

4. With the aid of the Model IMP Instruction Manual, rescale the digital indicator as follows:

   - Use key-in method to select SCALE, then....
   - Select YES to initiate the scaling program.
   - Follow displayed programmed steps to key in display and signal values for scaling point #1 (zero reference),
   - Follow displayed programmed steps to key in display and signal values for scaling point #2 (SPAN).

NOTE: At this point, scaling is complete, and the indicator automatically calculates the slope and offset of the display units.

- If it is desired to "PROGRAM NUMBER OF LINEAR SEGMENTS", continue following associated programmed instructions; then, exit program per displayed prompts. Otherwise, exit program by completing currently displayed associated prompts.

5. Vary the signal generator input per the Data Sheet. If data is within tolerance, record "AS LEFT" data on the Data Sheet.

6. If the digital indicator cannot be brought into tolerance, troubleshoot/repair/replace indicator and verify calibration.

14.3 Testing and Acceptance

Ensure all display readings are consistent with system conditions.

14.4 Restoration

1. Disconnect and remove test equipment

2. Reterm leads to digital indicator and ensure indicator is fully restored to normal conditions.

3. Reset alarms.

14.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

15.0 HONEYWELL MICROPROCESSOR DIGITAL CONTROLLERS

This procedure provides instructions for calibrating MCP-mounted Honeywell microprocessor digital controllers, Model UDC 3000.

15.1 Special Tools, Equipment, and Materials

- 4 mA - 20 mA signal generator (standard)
- DVM.

15.2 Instructions

1. Check that the digital controller is connected to its power supply and warmed up for at least 15 minutes.

2. Check that digital controller's LOCKOUT feature is set to NONE. (Refer to vendor manual, Section 3, configuration if necessary).

3. Using care not to remove the digital controller's external resistor assembly, lift process signal (+) and (-) input leads at the digital controller's terminal board and connect signal generator.

4. Lift digital controller's (+) and (-) output signal leads at the controller's terminal board and connect DVM (set for mA).

5. Insert signal generator inputs for Data Sheet and record "AS FOUND" data on Data Sheet. If data is within tolerance, record "AS LEFT" data on Data Sheet and proceed to RESTORATION. If data is not within tolerance, continue to step 6.

6. At the digital controller, perform the following sequence of steps to enable the calibration sequence:

   - Press SETUP UNTIL you see controller display CALIB in upper display and INPUT 1 in lower display.
   - Press FUNCTION; you will see DISABL in upper display and CAL IN1 in lower display.
   - Press UP ARROW; you will see BEGIN in upper display and CAL IN1 in lower display.

7. At the digital controller, perform the following sequence of steps to calibrate the 0% range value:

   - Press FUNCTION; you will see APPLY in upper display and IN1 ZERO in lower display.
   - Adjust signal generator input to 4 mA and wait thirty seconds.
   - Press FUNCTION; you will see APPLY in upper display and IN1 SPAN in lower display.
   - Adjust signal generator input to 20 mA and wait 30 seconds.

8. Press FUNCTION; the controller will store the calibration constants and exit the calibration mode.

9. Remove the signal generator and reterm process signal (+) and (-) input leads.

10. Press SETUP UNTIL you see CALIB in the upper display and CURRENT in the lower display.

11. Press FUNCTION; you will see "a value between 1 and 2048" in the supper display and ZERO VAL in the lower display.

12. Press UP ARROW or DOWN ARROW until the designed 0% output is read on the DVM as follows:

    - DIRECT ACTION....4 mA
    - REVERSE ACTION....20 mA.

13. Press FUNCTION:

    - This stores the 0% range value, and....

    - Indicates "a value between 1 and 2048" in the upper display and SPAN VALUE in the lower display.

14. Press UP ARROW or DOWN ARROW until the desired 100% output is read on the DVM as follows:

    - DIRECTION ACTION....20 mA
    - REVERSE ACTION....4 mA.

15. Press FUNCTION to store the span value.

16. Press LOWER DISPLAY to exit the calibration mode.

15.3 Testing and Acceptance

Run second calibration check; verify AS FOUND data within tolerance of Data Sheet.

15.4 Restoration

1. Remove test equipment.
2. Reterm digital control (+) / (-) input/output signal leads.
3. Reset alarms.

15.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

16.0 GENERAL EASTERN MOISTURE TRANSMITTER

This procedure provides instructions for calibrating the GENERAL EASTERN moisture transmitter, Model RH-2-IR.

16.1 Special Tools, Equipment, and Materials

- DVM
- RH Sample Standard: 30% RH and/or 80% RH environment
- Signal generator.

16.2 Instructions

NOTE: The following instructions provide guidance for on-line calibration. For more precise calibration, the system should be shut down and the sensor removed. The sensor should then be checked at a 30% RH environment and potentiometer VR1 adjusted accordingly. The sensor should then be checked at an 80% RH environment and potentiometer VH2 adjusted accordingly.

1. Remove cover from moisture transmitter enclosure.

2. For field calibration, perform the following:

   - Lift leads to the transmitter input and install signal generator.

   - Connect DVM in series with output of transmitter. Set DVM for mA.

   - Input test signals per Data Sheet and record "AS FOUND" data on Data Sheet. If within tolerance, Record "AS LEFT" data on Data Sheet and proceed to RESTORATION. If data not within tolerance, continue to next "bulleted" step.

   - Adjust potentiometer VR1 until transmitter output is within tolerance. Record "AS LEFT" data on Data Sheet and proceed with RESTORATION.

16.3 Testing and Acceptance

Moisture transmitter output signal is within tolerance of Data Sheet.

16.4 Restoration

1. Remove test equipment.
2. Reterm leads of moisture transmitter and replace cover.
3. Reset alarms and have operations personnel restart system if necessary.

16.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor. Return work package to Maintenance Supervisor.

5. Record 'AS LEFT' data on the Data Sheet. If module cannot be calibrated, troubleshoot /repair/replace module and verify calibration.

17.3 Testing and Acceptance

'AS LEFT' data is within tolerance specified by Data Sheet.

17.4 Restoration

1. At the ALARM AND LOCATING MODULE, press ESCAPE until SYSTEM NORMAL window is displayed.

2. Remove test equipment and reterm lead.

17.5 Disposition

1. Apply calibration labels.

2. Inform Field Supervisor of calibrations completed.

3. Send copy of work package to Cognizant Engineer/Field Supervisor, then return work package to Maintenance Supervisor.

17.0 RAYCHEM LEAK DETECTION ALARM AND LOCATING MODULES

This procedure provides instructions for calibrating RAYCHEM LEAK DETECTION ALARM AND LOCATING MODULES, Model TTDM.

17.1 Special Tools, Equipment, and Materials

- DVM (set for mA)
- RAYCHEM Leak Detection and Locating System Operations and Maintenance manual.

17.2 Instructions

1. Connect DVM (set for mA) IN-SERIES with ALARM AND LOCATING MODULE's signal input lead.

2. At the ALARM AND LOCATING MODULE, perform the following to access the 4-20 mA TEST mode:

   - Press ENTER; Main Menu is displayed.
   - Arrow down to VIEW/EDIT SETTINGS; press ENTER.
   - Arrow down to SELF-TEST MENU; press ENTER.
   - Input PASSWORD with ARROW key; press ENTER.
   - Arrow down to 4-20 mA TEST; press ENTER.
   - Arrow down to LEAK 3540 ft; press ENTER.
   - You will see LEAK ; press ENTER.
     3540 ft
     0001....5000

3. At the DVM, record the 'AS FOUND' data on the Data Sheet. If data is within tolerance, record 'AS LEFT' data on the Data Sheet and proceed to restoration. If data is not within tolerance, continue to Step 4.

4. Open the door of the ALARM AND LOCATING MODULE and adjust potentiometer V-7 until ALARM AND LOCATING MODULE is within tolerance. Close door.

APPENDIX A

INSTRUMENT CALIBRATION LIST 200W-ZP-1

This list includes **only those instruments** within loops that are actually calibrated. PLC devices such as electronic switches, electronic recorders, and alarms are **not** listed.

Instrument Loop	Function	Calibration Frequency
FT-E01, FI-FI1 (common to loop containing FT-E02, FT-E03)	Well pump PE01 flow	One year
FT-E02, FI-FI1 (common to loop containing FT-E01, FT-E03)	Well pump PE02 flow	One year
FT-E03, FI-FI1 (common to loop containing FT-E01, FT-E02)	Well pump PE03 flow	One year
FT-TSL01, FI-TSL01 (common to loop containing FT-I11)	Total extraction well flow	One year
TE-T01, TI-T01 (common to loop containing TE-T02)	Influent tank temperature	One year
LT-T01, LIC-T01	Influent tank T01 water level	One year
PDT-F1, PI-F1A, PI-F1B, PDI-F1 (common to loop containing PDT-F2)	Influent pump filter F-1A pressure; differential pressure	One year
FT-TSL02, FIC-TSL02	Stripper tower V01 inlet flow	One year
LT-V01, LIC-V01	Stripper tower V01 water level	One year
PDI-V01	Stripper tower V01 differential pressure	One year
PI-TSL03	Transfer pump PT03 discharge pressure	One year
TE-T02, TI-T02 (common with loop containing TE-T01)	Effluent tank T02 temperature	One year
LT-T02, LIC-T02	Effluent tank T02 water level	One year

Instrument Loop	Function	Calibration Frequency
PI-I01	Effluent pump PI01 discharge pressure	One year
PDT-F2, PI-F2A & PI-F2B, PDI-F2 (common to loop containing PDT-F1)	Effluent pump filter F-2A(2B) pressure; differential pressure	One year
FT-I11, FI-I11 (common with loop containing FT-TSL01)	Effluent pump PI01 flow	One year
FT-I01, FI-I1	Injection well INJ01 flow	One year
FI-TSA01	Air blower B01 discharge flow	One year
FT-TSA05, FI-TSA05	GAC canister bulk outlet flow	One year
PI-TSA01	Air blower B01 discharge pressure	One year
PI-TSA03	GAC Canister Inlet Header	One year
PI-TSA04	GAC Canister V02A Outlet/V03A Inlet	One year
PI-TSA05	GAC Canister Outlet Header	One year
PI-TSA07	GAC Canister V02B Outlet/V03B Inlet	One year
PI-TSA08	GAC Canister V02C Outlet/V03C Inlet	One year
PSHL-TSA01	Air blower B01 discharge pressure	One year
PSH-01	PT01 discharge pressure	One year
PSH-02	PI01 discharge pressure	One year
TE-C01, TT-C01, TI-C01	Chiller C-01 outlet temperature	One year

APPENDIX B

DATA SHEETS

Data Sheet Index

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: TT-C01	Model #: TX-64	Serial #: N/A
Manufacturer/Description: Omega		Location: C01/H01 Skid

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
(-) 20°F	4.00 mA	3.20 to 4.80 mA				
65°F	12.00 mA	11.20 to 12.80 mA				
150°F	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

Comments: TYPE "K" TE INPUT.

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: TT-H01	Model #: TX-64	Serial #: N/A
Manufacturer/Description: Omega		Location: C01/H01 Skid

Test Equipment:

Type of Equipment	Standards Number	Cal Exp Date
		/ /
		/ /
		/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
(-) 20° F	4.00 mA	3.20 to 4.80 mA				
65° F	12.00 mA	11.20 to 12.80 mA				
150°F	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: TT-TSA03	Model #: TX-64	Serial #: EX88B103703U
Manufacturer/Description: Omega/Heater H-01 Bulk Outlet Flow Temperature		Location: 10" TSA03-PVC (Above NE Side of Heater H-01)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
(-) 20°F	4.00 mA	3.20 to 4.80 mA				
65°F	12.00 mA	11.20 to 12.80 mA				
150°F	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-E01	Model #: 1151 DP 4522B1	Serial #: 1948372
Manufacturer/Description: Rosemount/Ext. Well WE01 Flow Transmitter		Location: 3" - E01-HDPE (NE Wall at 200-ZP-1 Bldg)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-E02	Model #: 1151DP 4522 B1	Serial #: 1948366
Manufacturer/Description: Rosemount/Ext. Well WE02 Flow Transmitter		Location: 3" E02-HDPE (NE Wall 200-ZP-1 Bldg.)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-E03	Model #: 1151DP	Serial #: 1900585
Manufacturer/Description: Rosemount/Ext. Well WE03 Flow Transmitter		Location: 3"-E03-HDPE (Ext. Manifold Bldg #1)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-TSL01	Model #: 1151DP	Serial #: 1900589
Manufacturer/Description: Rosemount/Ext. Well Bulk Flow Transmitter		Location: 6"-TSL01-HDPE (NE Wall 200-ZP-1 Bldg)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: PDT-F1	Model #: 1151DP	Serial #: 1948361
Manufacturer/Description: Rosemount/Influent Filter (PT01 Discharge)		Location: 6" - TSL02-PVC (PT01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0 psi	4.00 mA	3.20 to 4.80 mA				
25.0 psi	12.00 mA	11.20 to 12.80 mA				
50.0 psi	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-TSL02	Model #: 1151DP	Serial #: 1948361
Manufacturer/Description: Rosemount/PT01 Flow Transmitter		Location: 6" - TSL02-PVC. (PT01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	7.27 mA	7.00 to 8.00 mA				
25.0" wg	10.53 mA	10.00 to 11.00 mA				
56.25" wg	13.80 mA	13 to 14.60 mA				
100.0" wg	17.06 mA	16.20 to 17.80 mA				
150" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: LT-T01	Model #: 1151 DP	Serial #: 1954952
Manufacturer/Description: Rosemount/Influent Tank T01 Level Transmitter		Location: T01 (Rear of tank)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.0" wg	4.00 mA	3.20 to 4.80 mA				
85.0" wg	12.00 mA	11.20 to 12.80 mA				
170.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: LT-T02	Model #: 1151DP	Serial #: 1954953
Manufacturer/Description: Rosemount/Effluent Tank T02 Level Transmitter		Location: T02 (NW side of tank)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
85.0" wg	12.00 mA	11.20 to 12.80 mA				
170.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: LT-V01	Model #: GEMS P/N 800646	Serial #: 763735
Manufacturer/Description: GEMs/Stripper Tower V01 Level Transmitter		Location: V01

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.0" wg	4.00 mA	3.20 to 4.80 mA				
56.0" wg	12.00 mA	11.20 to 12.80 mA				
112.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: PDT-F2	Model #: 1151DP	Serial #: 1941360
Manufacturer/Description: Rosemount/Influent D.H. Pressure Transmitter (PE02 Discharge)		Location: 6" - I01-PVC (PI01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" psi	4.00 mA	3.20 to 4.80 mA				
25.0 psi	12.00 mA	11.20 to 12.80 mA				
50.0 psi	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-I11	Model #: 1151DP	Serial #: 1900605
Manufacturer/Description: Rosemount/Bulk Effluent Flow Transmitter		Location: 6" - I01-PVC (PI01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: FT-I01	Model #: 1151DP	Serial #: 1898718-04
Manufacturer/Description: Rosemount/Inj. Well INJ01 Flow Transmitter		Location: 3" - I02-HDPE (Inj. Manifold Bldg)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0" wg	4.00 mA	3.20 to 4.80 mA				
6.25" wg	8.00 mA	7.20 to 8.80 mA				
25.0" wg	12.00 mA	11.20 to 12.80 mA				
56.25" wg	16.00 mA	15.20 to 16.80 mA				
100.0" wg	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Process Activated Switch Calibration Test Record

EPN: PSH-01

Mfgr ASCO TRIPOINT Model No. N/A Serial No. A425927

Range 0 -100 psig* Location PT01 Skid

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

Readout Type: _____

Switch Data									
Test Input	Set @	As-Found	As-Left	Tolerance	Test Input	Reset @	As-Found	As-Left	Tolerance
	75.0 psig			± 5 psig		53.0 psig			± 5 psig

Please make appropriate selection ☐ Accept ☐ Reject

Remarks: *Opens on Raise, Closes on Fall

Performed By: _____ Date: / /

Checked By: _____ Date: / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Process Activated Switch Calibration Test Record

EPN: PSH-02

Mfgr ASCO TRIPOINT Model No. N/A Serial No. A425927

Range 0 - 100 psig * Location PI01 Skid

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

Readout Type: _____

Switch Data									
Test Input	Set @	As-Found	As-Left	Tolerance	Test Input	Reset @	As-Found	As-Left	Tolerance
	75.0 psig			± 5 psig		52.4 psig			± 5 psig

Please make appropriate selection ☐ Accept ☐ Reject

Remarks: *Opens on Raise, Closes on Fall

Performed By: _____ Date: / /

Checked By: _____ Date: / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Process Activated Switch Calibration Test Record

EPN: PSHL-TSA01

Mfgr UE Model No. J402 Serial No. 9612

Range 0-20 psig (*See note) Location Stripper Skid

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

Readout Type: _____

Switch Data									
Test Input	Set @	As-Found	As-Left	Tolerance	Test Input	Reset @	As-Found	As-Left	Tolerance
Fill in data below for PSL-TSA01:									
	28.9"					20"			
Fill in data below for PSH-TSA01:									
	72.3"					63.5"			

Please make appropriate selection ☐ Accept ☐ Reject

Remarks: *PSL...Closes on Raise. Opens on Fall. PSH... Opens on Raise, Closes on Fall.

Performed By: _____ Date: / /

Checked By: _____ Date: / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-F1A	Model #: N/A	Serial #: N/A
Manufacturer/Description: Ashcroft/Influent Filter F-1A Outlet Pressure Indicator		Location: 6" - TSL02-PVC. (PT01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00 psig	0.00 psig	(+)1 psig; (-)0 psig				
40.00 psig	40.00 psig	±3 psig				
80.00 psig	80.00 psig	±3 psig				
120.00 psig	120.00 psig	±3 psig				
160.00 psig	160.00 psig	±3 psig				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-F1B	Model #: N/A	Serial #: N/A
Manufacturer/Description: Ashcroft/Influent Filter F-1A Outlet Pressure Indicator		Location: 6" - TSL02-PVC. (PT01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.00 psig	0.00 psig	(+)1 psig; (-)0 psig				
40.00 psig	40.00 psig	±3 psig				
80.00 psig	80.00 psig	±3 psig				
120.00 psig	120.00 psig	±3 psig				
160.00 psig	160.00 psig	±3 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSA01	Model #: 1279	Serial #: NA
Manufacturer/Description: Ashcroft/Air Blower B01 Discharge Pressure Indicator		Location: 10" - TSA01-PVC (Stripper Tower V01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.0 psig	0.0 psig	±0.5 psig				
2.5 psig	2.5 psig	±0.5 psig				
5.0 psig	5.0 psig	±0.5 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSL03	Model #: 1188	Serial #: NA
Manufacturer/Description: Ashcroft/PT03 Discharge		Location: 6" - TSL03-HDPE (Stripper Tower V01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.0 psig	0.0 psig	±3 psig				
15 psig	15 psig	±3 psig				
30 psig	30 psig	±3 psig				
45 psig	45 psig	±3 psig				
60 psig	60 psig	±3 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-I01	Model #: 1188	Serial #: NA
Manufacturer/Description: Ashcroft/PI01 Discharge Process Indicator		Location: 6" - T012-PVC. (PI01 Skid)

Test Equipment:

Type of Equipment	Standards Number	Cal Exp Date
		/ /
		/ /
		/ /

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.0 psig	0.0 psig	±5psig				
25 psig	25 psig	±5 psig				
50 psig	50 psig	±5 psig				
75 psig	75 psig	±5 psig				
100 psig	100 psig	±5 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-F2A	Model #: 45-1279-S-04L	Serial #: NA
Manufacturer/Description: Ashcroft/Effluent Filter F-2A(2B) Inlet Pressure Indicator		Location: 6" - I01-PVC (PI01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00 psig	0.00 psig	± 5 psig				
40.00 psig	40.00 psig	± 5 psig				
80.00 psig	80.00 psig	± 5 psig				
120.00 psig	120.00 psig	± 5 psig				
160.00 psig	160 psig	± 5 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-F2B	Model #: 45-1279-S-04L	Serial #: NA
Manufacturer/Description: Ashcroft/Effluent Filter F2A(2B) Outlet Pressure Indicator		Location: 6" - I02-PVC (PI01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00 psig	0.00 psig	± 5 psig				
40.00 psig	40.00 psig	± 5 psig				
80.00 psig	80.00 psig	± 5 psig				
120.00 psig	120.00 psig	± 5 psig				
160.00 psig	160 psig	± 5 psig				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSA03	Model #: 1188	Serial #: NA
Manufacturer/Description: Ashcroft/GAC Canister Bulk Inlet Pressure Indicator		Location: 10"-TSA03-PVC (In GAC Canister Overhead Piping)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00" wg	0.00" wg	± 2" wg				
20.00" wg	20.00" wg	± 2" wg				
40.00" wg	40.00" wg	± 2" wg				
60.00" wg	60.00" wg	± 2" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSA05	Model #: 1188	Serial #: N/A
Manufacturer/Description: Ashcroft/GAC Canister Bulk Outlet Pressure Indicator		Location: 10" - TSA01-PVC (In GAC Canister Overhead Piping)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.00" wg	0.00" wg	± 2" wg				
20.00" wg	20.00" wg	± 2" wg				
40.00" wg	40.00" wg	± 2" wg				
60.00" wg	60.00" wg	± 2" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSA04	Model #: 1188	Serial #: NA
Manufacturer/Description: Ashcroft/V02H Outlet Pressure Indicator		Location: 6"-TSA04-PVC (In GAS Canister Overhead Piping)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00" wg	0.00" wg	± 2" wg				
20.00" wg	20.00" wg	± 2" wg				
40.00" wg	40.00" wg	± 2" wg				
60.00" wg	60.00" wg	± 2" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PI-TSA07	Model #: 1188	Serial #: NA
Manufacturer/Description: Ashcroft/V02B Outlet Pressure Indicator		Location: 6"-TSA07-PVC (In GAC Canister Overhead Piping)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
0.00" wg	0.00" wg	± 2" wg				
20.00" wg	20.00" wg	± 2" wg				
40.00" wg	40.00" wg	± 2" wg				
60.00" wg	60.00" wg	± 2" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: FI-TSA01	Model #: 2000-00AV	Serial #: NA
Manufacturer/Description: Dwyer/Air Blower B01 Discharge Flow Indicator		Location: 10"-TSA01-PVC (Stripper Tower V01 Skid)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00" H2O	0.00" H2O	± 0.05" H2O				
0.10" H2O	0.10" H2O	± 0.05" H2O				
0.15" H2O	0.15" H2O	± 0.05" H2O				
0.20" H2O	0.20" H2O	± 0.05" H2O				
0.25" H2O	0.25" H2O	± 0.05" H2O				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Field-Installed Analog Indicators

EPN: PDI-V01	Model #: 200-00AV	Serial #: NA
Manufacturer/Description: Dwyer/Stripper Tower V01 Diff. Pressure Indicator		Location: Stripper Tower V01

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00" H2O	0.00" H2O	± 0.10" H2O				
0.50" H2O	0.50" H2O	± 0.10" H2O				
1.10" H2O	1.10" H2O	± 0.10" H2O				
1.50" H2O	1.50" H2O	± 0.10" H2O				
2.00" H2O	2.00" H2O	±0.10" H2O				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: FI-E1	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Extraction Well Flow Indicator		Location: MCP (left door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
4.00 mA	0.00 gpm	(+) 3 gpm; (-) 0 gpm				
12.00 mA	75.00 gpm	72 to 78 gpm				
20.00 mA	150.00 gpm	147 to 153 gpm				

Please Circle: Accept or Reject

Reason: _____

Comments: Extraction wells share a common flow indicator.

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: LI-E1	Model # IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Extraction Well Level Indicator		Location: MCP (left door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
4.00 mA	0.00 ft	(+) 3 ft; (-) 0ft				
12.00 mA	58.00 ft	± 3.00 ft				
20.00 mA	115.50 ft	± 3.00 ft				

Please Circle: Accept or Reject

Reason: _____

Comments: Extraction wells share a common level indicator.

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: TI-T01	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/TI-T01 (T02) Tank Temperature Indicator		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00°F	0.00°F	± 3°F				
60.00°F	60.00°F	± 3°F				
110°F	110°F	± 3°F				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: Use TRANSMATION TE Type "J" simulator.

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: FI-TSL01	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Liquid Phase In Flows/Outflows (FI-TSL01, FI-I1D indicator)		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
4.00 mA	0.00 gpm	± 5 gpm				
8.00 mA	75.00 gpm	± 5gpm				
12.00 mA	156.00 gpm	± 5gpm				
16.00 mA	225.00 gpm	± 5 gpm				
20.00 mA	300.00 gpm	± 5 gpm				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: PDI-F1	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/F1 Filter Differential Pressure (F1, F2) Indicator		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00 psid	± 3 psid				
8.00 mA	12.50 psid	± 3 psid				
12.00 mA	25.00 psid	± 3 psid				
16.00 mA	37.50 psid	± 3 psid				
20.00 mA	50.00 psid	± 3 psid				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: TI-C01	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Chiller Outlet Temperature Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	(-) 20.00°F	± 5°F				
8.00 mA	55.00°F	± 5°F				
12.00 mA	85.00°F	± 5°F				
16.00 mA	115.00°F	± 5°F				
20.00 mA	150.00°F	± 5°F				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: TI-TSA03	Model #: IPM	Serial #: N/A
Manufacturer/Description: Red Lion Controls/Heater Out Temperature Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	(-) 20.00°F	± 5°F				
8.00 mA	55.00°F	± 5°F				
12.00 mA	85.00°F	± 5°F				
16.00 mA	115.00°F	± 5°F				
20.00 mA	150.00°F	± 5°F				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: FI-TSA03	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Heater Out Flow Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00 cfm	± 25 cfm				
8.00 mA	350.00 cfm	± 25 cfm				
12.00 mA	700.00 cfm	± 25 cfm				
16.00 mA	110.00 cfm	± 25 cfm				
20.00 mA	1400.00 cfm	± 25 cfm				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: MI-TSA03	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Heater Out (% RH) Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00% rH	± 2% rH				
8.80 mA	30.00% rH	± 2% rH				
12.00 mA	50.00% rH	± 2% rH				
16.00 mA	75.00% rH	± 2% rH				
16.80 mA	80.00% rH	± 2% rH				
20.00 mA	100.00% rH	± 2% rH				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: FI-TSA05	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/GAC Effluent Air Flow Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00 cfm	± 25 cfm				
8.00 mA	350.00 cfm	± 25 cfm				
12.00 mA	700.00 cfm	± 25 cfm				
16.00 mA	110.00 cfm	± 25 cfm				
20.00 mA	1400.00 cfm	± 25 cfm				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: FI-I1	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Injection Well Flow Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00 gpm	± 5 gpm				
8.00 mA	55.00 gpm	± 5 gpm				
12.00 mA	110.00 gpm	± 5 gpm				
16.00 mA	165.00 gpm	± 5 gpm				
20.00 mA	220.00 gpm	± 5 gpm				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Digital Indicators

EPN: LI-I1	Model #: IPM	Serial #: NA
Manufacturer/Description: Red Lion Controls/Injection Well Level Indicator		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
4.00 mA	0.00 ft	± 3 ft				
8.00 mA	58.00 ft	± 3 ft				
12.00 mA	115.50 ft	± 3 ft				
16.00 mA	173.00 ft	± 3 ft				
20.00 mA	231.00 ft	± 3 ft				

Please Circle: Accept or Reject

Reason: _____

Comments: Injection wells share a common level indicator.

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Microprocessor Controllers

EPN: LIC/T01	Model # UDC3000/DC300K	Serial #: NA
Manufacturer/Description: Honeywell/T01 Water Level Controller		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	**Desired Output**	**Tolerance**	**MCP**	**As Found**	**In/Out**	**As Left**
4.00 mA	0.00" wg	± 5" wg				
8.00 mA	42.50" wg	± 5" wg				
12.00 mA	85.00" wg	± 5" wg				
16.00 mA	127.50" wg	± 5" wg				
20.00 mA	170.00" wg	± 5" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: _ / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Microprocessor Controllers

EPN: LIC-T02	Model #: UDC3000/DC300K	Serial #: NA
Manufacturer/Description: Honeywell/T02 Water Level Controller		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00" wg	± 5" wg				
8.00 mA	42.50" wg	± 5" wg				
12.00 mA	85.00" wg	± 5" wg				
16.00 mA	127.50" wg	± 5" wg				
20.00 mA	170.00" wg	± 5" wg				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Microprocessor Controllers

EPN: FIC-TSL02	Model #: UDC3000/DC300K	Serial #: NA
Manufacturer/Description: Honeywell/PT01 Flow Controller		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00 gpm	± 5 gpm				
8.00 mA	46.00 gpm	± 5 gpm				
12.00 mA	92.00 gpm	± 5 gpm				
16.00 mA	138.00 gpm	± 5 gpm				
20.00 mA	184.00 gpm	± 5 gpm				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Microprocessor Controllers

EPN: LIC-V01	Model #: UDC3000/DC300K	Serial #: NA
Manufacturer/Description: Honeywell/Stripper Tower Water Level Controller		Location: MCP (Center door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	0.00" wg	± 3" wg				
8.00 mA	28.08" wg	± 3" wg				
12.00 mA	56.17" wg	± 3" wg				
16.00 mA	84.25" wg	± 3" wg				
20.00 mA	112.25" wg	± 3" wg				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

MCP-Installed Microprocessor Controllers

EPN: TDIC-H01	Model #: UDC3000/DC300K	Serial #: NA
Manufacturer/Description: Honeywell/Chiller-Heater AT Controller		Location: MCP (Right door)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
4.00 mA	(-) 20.00°F	± 5°F				
8.00 mA	52.50°F	± 5°F				
12.00 mA	85.00°F	± 5°F				
16.00 mA	137.50°F	± 5°F				
20.00 mA	150.00°F	± 5°F				

Please Circle: Accept or Reject

Reason: _____

_____

Comments: _____

_____

Performed By: _____ Date: / /

Checked By: _____ / /

200W-ZP-1 Groundwater Treatment

System Instrument Calibration

Data Sheet

Transmitter Calibration

EPN: MT-TSA03	Model #: RH-2-1-R	Serial #: N/A
Manufacturer/Description: General Eastern/Heater H-01 Relative Humidity		Location: 10" - TSA03-PVC (Above NE side of heater H-01)

Test Equipment:	Type of Equipment	Standards Number	Cal Exp Date
			/ /
			/ /
			/ /

********** Calibration Data **********

OUTPUT DATA						
Test Input	Desired Output	Tolerance	MCP	As Found	In/Out	As Left
0.00% rH	4.00 mA	3.20 to 4.80 mA				
30.00% rH	8.80 mA	8.00 to 9.60 mA				
50.00% rH	12.00 mA	11.20 to 12.80 mA				
80.00% rH	16.80 mA	16.00 to 17.60 mA				
100.00% rH	20.00 mA	19.20 to 20.80 mA				

Please Circle: Accept or Reject

Reason: _____

Comments: _____

Performed By: _____ Date: / /

Checked By: _____ / /